Spontaneous Closure of Acute Traumatic Renal Arteriovenous Fistulas

Acute traumatic arteriovenous fistulas of the kidney are a common injury resulting either from blunt trauma or penetrating renal wounds. Selective renal angiography is employed for the precise anatomic demonstration of these lesions early in the care of the patient.

Angiographic documentation of the spontaneous closure of acute traumatic renal arteriovenous fistulas was obtained in five patients who were managed conservatively and reexamined angiographically one to eight months following injury. This recently acquired understanding of the natural history of the lesion tends to negate the accepted surgical concept of early aggressive action designed to obliterate such lesions before the onset of significant secondary cardiovascular complications. At present it would appear that surgical intervention can safely be held in abeyance to permit a period of clinical observation in many instances.

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Renal Vein Thrombosis

Sudden, complete occlusion of the renal vein usually produces the classical picture of flank pain, fever, hematuria and proteinuria. Excretory urography reveals an enlarged kidney with absence of function, or delayed opacification of a compressed, stretched pelvo-calyceal system and sometimes ureteral notching by collateral veins. Less abrupt or incomplete occlusion produces less severe clinical and radiographic findings. In infants, dehydration is the usual cause of thrombosis; in adults, tumor, ascending thrombophlebitis, trauma and nephritis are frequent precursors. Differentiation from nephrosis can be difficult and important. Renal arteriography shows stretched interlobar arteries, a prolonged nephrogram, and dense, bulging pyramids. Cavography and renal venography demonstrate the site and extent of obstruction, but are not without the hazard of dislodgement of thrombi.

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Adrenal Venography

Adrenal venography is a useful supplementary technique for the demonstration and evaluation of adrenal tumors. Selective catheterization of the veins follows percutaneous insertion into the right femoral vein, and permits sampling of blood for hormonal assay as well as angiography. The right adrenal vein is approached directly from the inferior vena cava, the left by way of the left renal vein. Avascular tumors as small as 1 cm in diameter can be detected with this procedure. The complication of thrombosis and adrenal necrosis can be avoided by careful manual injection under fluoroscopic control.

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The Roentgenologic Diagnosis Of Lactase Deficiency

Deficiency of the intestinal enzyme lactase is now believed to be the most common abnormality of the small bowel in man. It occurs in 5 to 10 percent of the white population and in more than 70 percent of non-whites. The symptoms of the disease are produced by the osmotic effect of the undigested lactose which draws water into the bowel lumen. Gas and lactic acid are also produced by bacterial action of the sugar. This excess fluid and gas causes cramps and diarrhea.

The abnormality can be diagnosed by an insufficient blood glucose rise after an oral lactose tolerance test. Recently roentgen screening methods have been described for the detection of this en-

zyme deficiency: 50 grams of lactose are mixed with the barium solution used for a small bowel examination. Serial roentgenograms are taken in the usual way. In the presence of lactase deficiency, characteristic radiographic changes occur with dilatation of the distal small bowel and pronounced dilution of the barium. This dilution effect is even more striking in the colon, where barium is usually concentrated by water resorption. Rapid transit is also characteristic and the patients with this disorder usually report cramps and diarrhea during the examination.

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Selective Arteriography in Locating The Site of Gastrointestinal Hemorrhage

Bleeding into the gastrointestinal lumen at a rate as low as 0.5 ml per minute (360 ml per 24 hours) can be demonstrated by selective visceral arteriography. Wide clinical experience has now established arteriography as an important technique in evaluation of gastrointestinal bleeders. In addition to demonstration of active bleeding, arteriography can establish the direction of blood flow in the portal system, and the presence of a variety of vascular, neoplastic, and inflammatory lesions serving as a source of chronic or recurrent bleeding.

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Splanchnic Artery Stenosis and Occlusion

On review of more than 700 splanchnic artery angiograms a 17.3 percent incidence of occlusion of single or multiple vessels was noted. The majority of these investigations were for hypertension, peripheral vascular disease, or abdominal masses. The celiac artery was more frequently involved with non-arteriosclerotic lesions such as fibromuscular hyperplasia, impression of the crus of the diaphragm, or adhesive bands. The superior mesenteric and inferior mesenteric arteries were more commonly affected by concentric narrowing of arteriosclerosis. None of the patients with eccentric stenosis exhibited typical abdominal angina despite severe stenosis and multiple vessel involvement. Surprisingly, 49 percent of the patients with obstruction of the celiac artery had abdominal symptoms attributable to the lesion.

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Preliminary Sensitivity Testing In Intravenous Pyelography

Minor reactions to intravenous contrast media used in excretory urography occur rather commonly. These are generally mild and transient, and require no treatment. Rarely severe reactions occur requiring prompt treatment to prevent death or other serious consequence. No preliminary sensitivity testing procedure has been found to be absolutely reliable for excluding those patients who will experience either an untoward or an allergic reaction to the intravenous iodine-containing contrast medium. Most radiologists perform a preliminary sensitivity determination of some kind, usually the intravenous injection of a small volume of the contrast medium. A history of clinical allergic disease, sensitivity to iodine, or an untoward reaction to the previous pyelogram injection should alert the physician to a greater possibility of reaction to the injection medium. Drugs and equipment to treat severe reaction promptly should be readily available. Prophylactic treatment with steroids or antihistamines may be required if the examination is absolutely necessary and the patient has a known allergic response to the contrast medium.

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